

U.S. DoD Non-Lethal Weapons Program



# NON-LETHAL WEAPONS

FOR COMPLEX ENVIRONMENTS



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***“The committee reiterates its belief that non-lethal weapons can and should play an increasingly important role in meeting the evolving requirements of U.S. military strategy.”***

— Report of the Committee on Armed Services  
 U.S. House of Representatives  
 National Defense Authorization Act for Fiscal Year 2011

**Front Cover:** A U.S. Marine engages an unknown driver of a vehicle with an LA-9/P™ optical distracter during escalation-of-force procedures. (DoD Photo/Robert B. Hinton)  
**Back Cover:** A U.S. Army staff sergeant with the 204th Brigade Support Battalion, 2nd Brigade Combat Team, 4th Infantry Division, in Kandahar, Afghanistan, loads non-lethal rounds into an M-203 grenade launcher.



***“...we will do all that we can to adhere to the directive ... associated with the escalation-of-force, to ensure that on those occasions where we have to apply force, we do so with every possible measure taken to avoid civilian casualties.”***

*— General John R. Allen, U.S. Marine Corps  
Commander, International Security Assistance Force  
and Commander, U.S. Forces Afghanistan,  
Department of Defense news briefing via  
teleconference from Afghanistan, Aug. 10, 2011*







# U.S. DoD Non-Lethal Weapons Program

The Department of Defense Non-Lethal Weapons Program stimulates and coordinates non-lethal weapons requirements of the U.S. Armed Services and allocates resources to help meet these requirements. The Commandant of the Marine Corps serves as the DoD Non-Lethal Weapons Executive Agent.

Located at Marine Corps Base Quantico, Va., the Joint Non-Lethal Weapons Directorate is the Executive Agent's day-to-day management office and serves as a focal point to coordinate non-lethal weapons program activities with the Office of the Secretary of Defense, the Joint Staff, the Services, NATO and other government

agencies. The Services work with the Combatant Commanders and the Executive Agent through a joint process to identify non-lethal weapon requirements.

The DoD Non-Lethal Weapons Program fiscal year 2011 budget was approximately \$138 million. This budget included Joint funding executed under the direction of the Executive Agent for a wide range of program activities including non-lethal weapons research and development, as well as Service funding for non-lethal weapons procurement, operation and maintenance support.



*U.S. Marines prepare mortars, while individuals with the DoD Non-Lethal Weapons Program gather information to support development of a potential non-lethal round.*



# U.S. DoD Non-Lethal Weapons Policy & Strategy

Today's global security environment is complex and dynamic. Economic and political upheaval and militant extremism represent just a few of the growing threats the United States faces. These challenges can spark conflicts, especially in traditionally unstable regions, which can place critical U.S. national security interests at risk.

While the threat of conventional, state-on-state conflicts continues to exist, the U.S. military is increasingly engaged in various irregular warfare contingencies in support of U.S. national interests. These include counter-terrorism, counterinsurgency, peacekeeping, counter-piracy, stability, security, transition, and reconstruction operations. In many cases, U.S. military forces confront adversaries who wear no uniforms, represent no government, operate in complex urban environments, or intermingle among the local civilian population.

To ensure mission success in this challenging global environment, flexible and adaptive policies and strategies are needed for the operations in which U.S. forces are likely to be involved. Current U.S. policy and strategy recognize the complex security environment and the dynamic nature of

security threats, and place a premium on minimizing casualties and collateral damage to property and infrastructure. Numerous high-level strategy and Department of Defense guidance documents reflect this policy — from the “National Military Strategy” to the tactical directives governing coalition operations in Afghanistan — and recognize that the unintentional killing of civilians can turn tactical victories into strategic defeats, undercutting broader U.S. goals and objectives.

Non-lethal weapons are important tools that can help the United States attain these tactical and strategic objectives, supporting the requirements of U.S. policy and strategy, and helping to enable mission success.

The value to the warfighter of **DoD Non-Lethal Weapons Program** investment in non-lethal technologies and systems is in minimizing the loss of life and damage to infrastructure and property, solidifying international partnerships, and achieving mission objectives. As a result, a robust research, development, testing and evaluation effort leading to the wider procurement and fielding of non-lethal capabilities helps U.S. forces more successfully respond to today's threats and tomorrow's challenges.



## Non-lethal weapons are more than just tactical weapons — they are strategic enablers whose use can:

- Minimize unintended casualties and help avoid consequential strategic setbacks.
- Avoid major reconstruction costs through their reversible effects on materiel.
- Provide scalable options that de-escalate the potential for lethal violence.
- Create a more capable and versatile force without loss of lethality.
- Respond to the dynamic strategic environment and the requirements of potential future challenges and threats.
- Conform to U.S. military strategy and the requirements of international law.



# INTERVIEW WITH LIEUTENANT GENERAL TRYON



Commandant of the Marine Corps General James F. Amos, (left) and Lieutenant General Richard T. Tryon, (middle) speak with Lieutenant Colonel Christopher G. Dixon, U.S. Marine Corps commanding officer, 3rd Battalion, 2nd Marine Regiment, at Camp Leatherneck, Helmand Province, Afghanistan on Sept. 22, 2011.

**L**ieutenant General Richard T. Tryon is the Deputy Commandant of the Marine Corps for Plans, Policies & Operations. As Chairman of the Joint Non-Lethal Weapons Program Integrated Product Team, he supports the Commandant of the Marine Corps in his role as Department of Defense Non-Lethal Weapons Program Executive Agent by leading a general/flag officer guiding body that oversees Joint Non-Lethal Weapons Program matters.

## **Q. How do non-lethal weapons fit into the diverse nature of today's operations?**

**A.** The DoD Non-Lethal Weapons Program was originally intended to provide warfighters with force protection capabilities for crisis response and limited contingency operations. The program is poised to have a much broader role in providing force application capabilities across the range of military operations, to include irregular warfare. While non-lethal weapons will continue to be employed in traditional applications, there is growing appreciation for their use in operations like counterinsurgency.

In Afghanistan, civilian casualty avoidance has become a central warfighting requirement, as evidenced by successive ISAF Commanders'

Tactical Directives. Non-lethal weapons provide the only escalation-of-force options between presence and lethal response. Their use to determine intent of potential hostiles or to isolate combatants from civilians highlights this broader role, and supports tactical objectives to defeat the enemy and strategic objectives to win the population.

A growing number of Combatant Commanders, NATO working groups, and members of Congress recognize the versatility of these unique combat enablers and are seeking increased non-lethal capabilities and training for the force, and formal assessments on their utility.

## **Q. Will increased employment of non-lethal weapons in today's operations degrade the**



## U.S. Military's reputation as a tenacious and feared adversary?

**A.** Non-lethals will never replace lethal weapons, and their availability does not limit a commander's inherent right and obligation to exercise self-defense or employ lethal means. U.S. forces will continue to locate, close with and destroy our nation's enemies when called to do so. However, U.S. forces proficient in both lethal and non-lethal capabilities are better prepared for today's complex environments, and are able to leverage their superior training, weaponry and synchronization to lethally drive enemy combatants from the battlefield, or non-lethally engage targets in uncertain situations. Such discriminate use of force enhances our reputation, communicates our commitment to protect innocents, reassures strategic friends and allies, and helps to win "hearts and minds."

## Q. What are the key attributes non-lethal weapons should possess to make them most relevant and useful to achieving mission success?

**A.** Non-lethal weapons should offer precise and incapacitating effects on personnel or materiel that complement lethal means to promote a commander's freedom of action to seize the initiative, regardless of the military environment's complexities. Non-lethal weapons should also possess effective ranges that increase engagement space and time, and capabilities that satisfy formally identified gaps or urgent operational needs. Whenever possible, non-lethal weapons should be compatible with existing weapons/platforms and provide utility across the spectrum of conflict.

The DoD Non-Lethal Weapons Program continues to expand the non-lethal inventory, with greater ranges and capabilities in development. Emerging non-lethal directed energy weapons offer significant increases in ranges and precision. Development and fielding of non-lethal munitions for existing lethal weapons and platforms will produce scalable effects systems that afford commanders greater capability without the added weight of non-organic equipment.

## Q. What role do you expect non-lethal weapons to play in meeting future military-operational requirements?

**A.** Our armed forces are increasingly likely to operate in urban environments in which the enemy hides among the innocent. Non-lethal capabilities that allow military forces to succeed in such environments without alienating endemic populations will be crucial. While existing non-lethal weapons facilitate reductions in civilian casualties and property damage on a tactical level, emerging and future systems could offer such benefits on a larger, strategic scale. Future weapons with self-regenerating "electromagnetic" fires that preserve critical infrastructure could temporarily deny enemy use of radio stations, water plants or bridging, while allowing for their later use by friendly forces. Such capabilities could minimize Phase IV/V (Stabilize/Enable Civil Authority) reconstruction requirements.

## Q. Looking forward, how would you summarize the future value of non-lethal weapons?

**A.** Due to their growing utility across a wide range of missions, I fully expect increased non-lethal weapons usage across all phases of operations. Growing numbers of commanders will recognize and appreciate, as I did, that non-lethal weapons facilitate unit adaptability to the most challenging environments.

The DoD Non-Lethal Weapons Program will continue to promote and identify game-changing scientific advancements and further refine existing technologies for development and integration within the force's non-lethal inventory. And while fully scalable weapons may be years from development, we will strive to incorporate existing non-lethal munitions within fielded weapons and platforms to provide commanders with scalable effects systems in the near term.

I look forward to your ideas on these matters, and invite you to contact my staff at the Joint Non-Lethal Weapons Directorate.

***"Non-lethal effects are part of the Department of Defense portfolio of capabilities that enhance the Joint Force Commander's ability to act in a timely manner to detect, deter, prevent, defeat, or, if necessary, mitigate effects of an attack."***

— General James F. Amos  
Commandant of the Marine Corps and Executive Agent, DoD Non-Lethal Weapons Program

Testimony: Department of Defense Appropriations for Fiscal Year 2012  
U.S. Senate Defense Subcommittee of the Committee on Appropriations  
Washington, D.C., March 16, 2011





# U.S. SERVICE HIGHLIGHTS

American forces frequently operate in uncertain environments, where it is difficult to distinguish the enemy from the civilian population. Checkpoints, entry-control points, convoys, maritime security, patrols and crowd control are among the operations where our men and women in uniform routinely encounter threats.

Success in these types of operations requires capabilities that enable our forces to minimize civilian casualties and collateral damage. Non-lethal weapons

can support escalation-of-force and complement lethal weapons in these challenging operating environments.

The Services and Special Operations Command use, research and develop non-lethal capabilities that span across the force continuum.

The following pages highlight the Services' non-lethal weapons-related activities and accomplishments that focus on filling the warfighters' requirements.

## U.S. Services and Special Operations Command use non-lethal weapons to:

### U.S. Army

- Deny, move, disperse and suppress personnel
- Disable materiel
- Warn and stop vehicles
- Provide protective equipment

### U.S. Navy

- Warn and stop vessels and vehicles at safe distances
- Integrate small, light-weight, cost-efficient directed energy systems into shipboard platforms as part of the ship's self-defense system
- Determine intent of potential hostile individuals

### U.S. Coast Guard

- Augment lethal weapons
- Warn and stop vessels at safe distances
- Determine intent of potential hostile individuals

### U.S. Special Operations Command

- Stop vehicles and vessels
- Deny access or isolate an objective
- Clear buildings and/or structures with standoff capability

### U.S. Marine Corps

- Augment lethal weapons
- Deny, move, disperse and suppress personnel
- Deny access to facilities
- Warn or stop vehicles and small vessels
- Disable materiel

### U.S. Air Force

- Achieve compliance
- Facilitate target identification, crowd control and limit mobility of threats
- Provide protection from blunt-trauma injuries from thrown objects



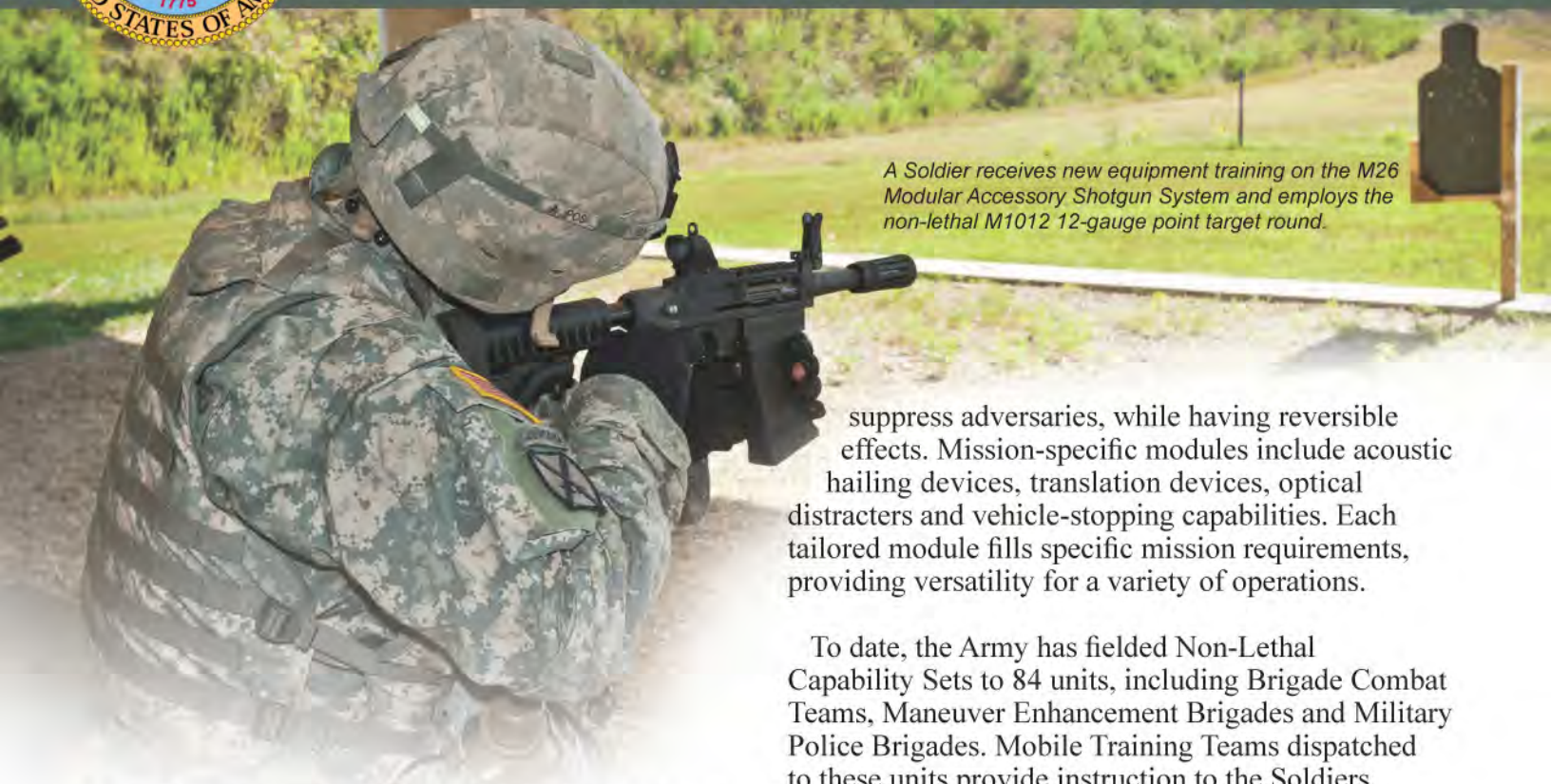
Language translation devices in conjunction with acoustic hailing devices provide our military forces the tools they need to minimize casualties and collateral damage. The SQU.ID® is an electronic device that audibly translates English to other languages.





# U.S. ARMY

Central Action Officer  
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*A Soldier receives new equipment training on the M26 Modular Accessory Shotgun System and employs the non-lethal M1012 12-gauge point target round.*

suppress adversaries, while having reversible effects. Mission-specific modules include acoustic hailing devices, translation devices, optical distracters and vehicle-stopping capabilities. Each tailored module fills specific mission requirements, providing versatility for a variety of operations.

To date, the Army has fielded Non-Lethal Capability Sets to 84 units, including Brigade Combat Teams, Maneuver Enhancement Brigades and Military Police Brigades. Mobile Training Teams dispatched to these units provide instruction to the Soldiers receiving the new Non-Lethal Capability Sets. The Army expects to complete fielding of these escalation-of-force capabilities to 110 units in 2012.

The **Vehicle Lightweight Arresting Device Single Net Solution** and **Remote Deployment Device** is a pre-emplaced, man-portable system designed to capture vehicles at checkpoints, entry-control points and other restricted areas.

The Single Net Solution is able to capture heavier vehicles than the currently fielded M2 Vehicle Lightweight Arresting Device. The Single Net Solution features leading-edge spikes that enable the net to wrap around and entangle the front wheels and axles of a vehicle, halting rotation. The Single Net Solution can be placed across a road manually, or mechanically with the Remote Deployment Device. The Remote Deployment Device is a hand-wound, mechanical spring-loaded, winch-type system, designed to pull the Single Net Solution or a Vehicle Lightweight Arresting Device across a roadway within seconds to capture a wheeled vehicle. The additional standoff distance the devices provide also increases warfighter safety.

Seeking to provide Soldiers with multi-functional, counter-personnel, non-lethal launching platforms, the Army has taken delivery of 1,900 M26 **Modular Accessory Shotgun Systems**. The Modular Accessory Shotgun System, referred to as MASS, can quickly and efficiently fire non-lethal M1012 and M1013 12-gauge rounds. The lightweight weapon can be configured as a stand-alone system, or as an under-barrel attachment to the M4 carbine and M16 Modular Weapon System. This multi-use weapon provides Soldiers with the capability to breach doors using special slugs or fire non-lethal, rubber slugs or pellets, as well as lethal munitions. Its detachable magazine enables quick reload or change of ammunition types. This versatility eliminates the need for Soldiers to carry additional non-lethal weapons. When fielded in early 2012, the M26 will be the most tested, most reliable and lightest shotgun in the Army's inventory.

An escalation-of-force option the Army continues to field is the **Non-Lethal Capability Set**. Non-Lethal Capability Sets are versatile packages of non-lethal weapons, and devices that expand the Services' range of non-lethal capabilities. These multipurpose sets provide our forces with counter-personnel and counter-materiel capabilities to deny, move, disable or





# U.S. MARINE CORPS

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*The pyrotechnic payload of the Mission Payload Module Non-Lethal Weapon System creates a flash-bang effect, as seen during a technology development phase testing.*

The Marine Corps is developing the **Mission Payload Module Non-Lethal Weapon System** with the intention of augmenting, but not replacing, lethal weapons. The Mission Payload Module Non-Lethal Weapon System is a vehicle-mounted, multiple tube launcher that provides selective, scalable, non-lethal effects. It will be capable of delivering a flash-bang effect that causes temporary sensory overload of visual and auditory systems while preserving life and limb.

The Mission Payload Module Non-Lethal Weapon System is designed to suppress noncompliant individuals, deny them access in or out, or move them through an area. This technology has the potential to support multiple missions, including but not limited to crowd control, urban patrols, entry-control points, vehicle checkpoints and convoy operations.

The system's munitions are expected to reach greater ranges with improved accuracy and greater volume of fire than currently fielded non-lethal weapons systems.

In 2011, the Mission Payload Module Non-Lethal Weapon System project made great advances in the acquisition process. It successfully completed a technology development phase, with competitive prototyping by two vendors. In addition, a human effects analysis of the non-lethal payload was conducted to determine

physiological effects and risk of significant injury. The Mission Payload Module Non-Lethal Weapon System is scheduled to reach Milestone B and begin the engineering, manufacturing and development phase in fiscal year 2012. The Marine Corps plans to begin production and deployment of the counter-personnel capability by 2015.

To safely and effectively warn individuals entering a lethal force authorized zone, the Marine Corps is pursuing the **Ocular Interruption** device. The new device will incorporate controls to reduce the risk of unintended lasing, lessening the potential for eye injury. Using the latest technology, this device will integrate an eye-safe rangefinder with a dazzling laser to automatically regulate the exposure to the laser. The device will be commercially available and replace the currently fielded dazzling lasers for short to medium range engagements. Incorporating an adjustable beam, the device will allow the operator to vary the spot size to best match the tactical situation. The Ocular Interruption device will be globally employed, providing an enhanced escalation-of-force option to deployed Marines.

The Marine Corps has also developed Escalation-of-Force Mission Modules, which provide commanders modular capabilities sets that can be tailored to fit missions down to the platoon/squad level. Equipment groups support vehicle/entry control points, crowd dispersion and perimeter establishments.





# U.S. NAVY

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The Navy uses a variety of fielded non-lethal weapons, munitions and devices in their operations. Acoustic hailing devices, and optical distracters and flash bang munitions provide auditory and visual effects that can warn or deter targeted individuals, as well as de-escalate potentially threatening situations. The Navy's fielded non-lethal capabilities provide enhanced escalation-of-force options for a variety of expeditionary missions, including:

- Port, harbor patrol or force protection
- Interdiction or vessel board, search, seizure
- Support or clearance functions
- Critical infrastructure protection
- High-value unit escort
- Humanitarian assistance or disaster relief

**Acoustic hailing devices** are non-lethal, counter-personnel, long-range warning devices. They produce focused, scalable, directional sound beams or intelligible voice commands that range beyond 300 yards, depending on atmospheric conditions, listener background noise, and other environmental factors. Some models feature pre-programmed foreign phrase commands. The devices can be ground-, vehicle- or vessel-mounted.

**Optical distracters**, such as dazzling lasers, communicate an unmistakable non-verbal warning. Their high-intensity laser temporarily overwhelms the targeted individual's visual sense with a bright flash or glare effect. The devices can be hand-held or weapon-, vehicle- or vessel-mounted. The LA-9/P™, a hand-held model that features a safety control module, will be phased out and replaced with the Marine Corps Ocular Interruptor device.

**Joint Non-Lethal Warning Munitions** are three 40mm rounds and two 12-gauge rounds that provide a pyrotechnic airburst flash bang when fired from 12-gauge shotguns or handheld 40mm grenade launchers. These munitions are designed to deny access into or out of an area to individuals, move individuals through an area, or suppress individuals.

The Navy is also exploring future capabilities and analyzing potential non-lethal weapons. Their efforts seek to provide non-lethal capabilities that warn, neutralize or incapacitate targeted individuals immediately, without causing injury or death, and minimize physical destruction of property.



*A U.S. Navy vessel board, search and seizure team assigned to the guided-missile cruiser USS Anzio (CG 68) investigates a suspected pirate skiff in the Gulf of Aden.*





# U.S. AIR FORCE

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*The Non-Lethal Test Team deploys a Pit-BUL™ vehicle-arresting device during the Joint Technology Assessment Activity.*



Air Force security forces need the capability to stop vehicles without causing serious injury or death to the occupants. As a part of this effort, Headquarters Air Force Security Forces Center recently worked with the Joint Technology Assessment Activity to conduct a military utility assessment of the **Pit-Ballistic Undercarriage Lanyard™** vehicle arresting device, also known as Pit-BUL™. While having similar capabilities as the Vehicle Lightweight Arresting Device Single Net Solution and Remote Deployment Device, the Air Force chose to conduct the assessment to address unique, specific missions of their Service. It provides a passive, deterrent speed bump, which can be utilized as a permanent or semi-permanent expeditionary net to stop vehicles.

The Pit-BUL™ offers unique capabilities for stopping a vehicle with little to no harm to the occupants. Its vehicle arresting net could enhance the Air Force's existing capabilities by providing more options for personnel to use at checkpoints, as well as at established or expeditionary bases and facilities. The Pit-BUL™ system allows personnel to deploy the net from a distance as a vehicle approaches or to launch the net in response to other situations. Having a remote deployment capability allows a gate guard to use the Pit-BUL™ system while performing required mission functions. Based on the assessment, the Pit-BUL™ vehicle arresting device has proven extremely effective in capturing small vehicles, and with system modifications, it should be equally as effective in stopping large vehicles.

Air Force security forces are looking for ways to enhance mission effectiveness with a more robust and effective

TASER® human electromuscular incapacitation capability. The Air Force recently conducted a utility assessment on the **TASER® X26, X3 and X2**. The assessment involved operators from the Air Force, Army, Marine Corps, Department of Defense police officers and security guards and Special Operations Command. The utility assessment compared the operational characteristics of the three TASERs® with the capability to support security forces' missions in an operational environment. Test scenarios included accuracy of associated TASER® cartridges, multiple shot operations, uniform compatibility, and suitability issues. Ongoing testing is providing additional effectiveness data for the Air Force.

The Air Force currently uses **Non-Lethal Capability Sets** to support their deployable squads. These originally configured Non-Lethal Capability Sets met the needs of the Air Force security forces involved in crowd control situations with riot control gear and non-lethal munitions.

With new mission requirements for their security forces, the Air Force has begun to develop modular non-lethal weapon kits capable of enhancing mission operations. Efforts are being taken to obtain modular Escalation-of-Force Kits, similar to the Army and Marine Corps kits. The modular kits will be more oriented towards specific missions and will contain equipment such as dazzling lasers, white lights, and devices for explosive detection, vehicle stopping and vehicle searches. In addition to current capabilities, the Escalation-of-Force Kits will provide new and robust capabilities for security force personnel.





# U.S. COAST GUARD

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Non-lethal weapons play an important and visible role in the escalation-of-force required for many Coast Guard missions. The Coast Guard is a member of the Armed Services at all times and in all locations in accordance with U.S. Code Title 10. U.S. Code Title 14, Law Enforcement Authorities, applies to waters, vessels and people over which the Coast Guard has jurisdiction. The Coast Guard uses non-lethal capabilities to reduce operational risk and limit collateral damage while executing the nation's maritime strategy.

In 2007, the Coast Guard purchased **Running Gear Entanglement Systems** for units to use in harbor security, force protection or vessel pursuit missions. The Running Gear Entanglement System is a shoulder-launched or vessel side-launched entanglement net. Additionally, the Coast Guard previously fielded a static barrier model that can provide defense to high-value assets from propeller-

driven watercraft. Currently, the Coast Guard is working with the Navy on the next generation of entanglement devices. These systems will enhance the Coast Guard's current capability and leverage presently employed escalation-of-force tools and munitions.

The Coast Guard tested numerous non-lethal munitions, and found those that hail or warn another boat or target especially effective. Currently, the Coast Guard is evaluating the **LA51**, which could be fielded in 2012.

The LA51, officially titled Less Lethal Warning Munitions, is a two-part, 12-gauge shotgun munition. The first part is a standard casing and charge that can propel the round up to approximately 100 yards. The second part, the projectile, includes pyrotechnics and a timer, which delays the non-lethal effects. When the munition detonates, it delivers a loud bang and brilliant flash.



A U.S. Coast Guardsman fires an LA51 at twilight.



Members of the U.S. Coast Guard Marine Safety and Security Team 91101 fire non-lethal rounds.



# U.S. COMBATANT COMMANDS



*U.S. Africa Command: A U.S. Marine Corps Military Policeman receives an electrical shock from a TASER® during non-lethal weapons training at African Lion 2011.*



*U.S. Central Command: A U.S. Air Force Expeditionary security forces Airman watches a South Korean Security Forces soldier fire a non-lethal 40mm sponge round during M203 grenade launcher training in Afghanistan.*

U.S. Combatant Commanders understand the important role that non-lethal weapons play in reducing civilian casualties, protecting critical infrastructure, and reducing U.S. reconstruction costs — critical elements in many of today's operations.

The Department of Defense Non-Lethal Weapons Program works with the Combatant Commands through the program's Combatant Liaison Officers to continue to integrate non-lethal weapons into the mainstream of military capabilities, so that U.S. forces have the range of capabilities necessary to address current challenges successfully.

The following sections highlight each Combatant Command's specific needs for non-lethal weapons and some of their non-lethal weapons-related activities in FY 2011:

## U.S. Africa Command

U.S. Africa Command plans for the use of non-lethal weapons capabilities in humanitarian assistance, non-combatant evacuation, and peacekeeping operations.

In pursuit of these objectives, non-lethal weapons training is an integral part of the command's exercises. The command participated in the bilateral exercises African Lion with Moroccan military forces and Shared Accord with South African military forces. Natural Fire was a multilateral regional security effort the command conducted with Kenya, Uganda, Tanzania, Rwanda and Burundi.

## U.S. Central Command

Because operational experience in U.S. Central Command dictates the need for forces trained in

non-lethal weapons, the command has mandated non-lethal training as a prerequisite for its deploying forces.

The command also conducted an assessment of non-lethal weapons operational use in its area of responsibility via a ground forces survey. The survey's findings resulted in the establishment of non-lethal weapons pre-deployment requirements for deploying forces. These new requirements are intended to increase user capability and proficiency, and assist in reducing civilian casualties, protecting host nation civilians, and gaining the trust of local citizens by coalition forces.

## U.S. European Command

Non-lethal weapons training and education support a number of specific objectives in the U.S. European Command's strategy of active security, which seeks to promote responsible governance; provide a forward presence; instill regional stability; advance of democratic institutions; and diminish conditions that foster violent extremism.

The command held non-lethal weapons training and demonstrations in conjunction with the Black Sea Rotational Force, a multi-year program in which Marine Corps units are rotationally deployed to U.S. military bases in the Black Sea region to build military capacity, provide regional stability, and develop lasting regional partnerships.

## U.S. Northern Command

U.S. Northern Command understands the value of non-lethal weapons in situations of civil disturbance, where it is imperative to avoid civilian casualties. As a part of this effort, the command's participation in





*U.S. European Command: A Romanian soldier thanks a U.S. Marine Corps Black Sea Rotational Force 11 rifleman for allowing him to use the Marine's rifle, which fired non-lethal rounds.*



*U.S. Special Operations Command: A U.S. Army Soldier fires a hail and warn munition of Harbinger, a non-lethal weapon escalation-of-force family of systems.*

non-lethal weapons exercises included Joint Patriot, a multi-agency, annual homeland defense-training event sponsored by the National Guard Bureau, and Vigilant Shield, a synchronized response exercise to homeland threats held in coordination with Canadian forces.

### **U.S. Pacific Command**

Humanitarian assistance and disaster relief missions in the U.S. Pacific Command have necessitated the command's increased use of non-lethal weapons capabilities in terms of cooperative security, and have also received significant interest from partner nations in their use.

The command's multi-lateral exercises included Cobra Gold in Thailand and Balikatan in the Philippines. The Non-Lethal Weapons Executive Seminar or "NOLES" in Thailand increased awareness of non-lethal weapons used to maintain order in low-intensity scenarios with 13 additional nations in attendance.

### **U.S. Southern Command**

U.S. Southern Command has been integrating non-lethal weapons into their plans, operations, and theater security cooperation activities, including training. Political instability in its area of responsibility generated a request for additional non-lethal weapons technologies and training to augment their current capability.

The command participated in the Tradewinds exercise, which included non-lethal weapons training involving 21 partner nations in conjunction with the Defense Forces of Antigua and Barbuda.

### **U.S. Special Operations Command**

Responsible for leading, planning, synchronizing and, as directed, executing global operations against terrorists networks, U.S. Special Operations Command trains, organizes, equips and deploys combat-ready Special Operations Forces. The command recognizes that the use of non-lethal weapons and non-lethal effects provide the Special Operations Forces warfighter with time to sort out situations prior to the escalation to lethal weapons.

The command conducted several military utility assessments, limited user evaluations, and non-lethal weapons demonstration and familiarization firings, which included the Harbinger warning and counter-personnel, 40mm rounds and the "KIBOSH" counter-vehicle, 40mm round.

### **U.S. Transportation Command**

U.S. Transportation Command provides air, land and sea transportation for the DoD, including supporting humanitarian and contingency operations. Forces assigned to its component command's use non-lethal weapons in carrying out their missions.

The command's exercises Point Defender and Coyote Shield, focused on antiterrorism/force protection exercises that test security for port and facility operations. Point Defender was held at the Military Ocean Terminal, Sunny Point, N.C., and Coyote Shield took place at Military Ocean Terminal, Concord, Calif.



# TRAINING



As with all military capabilities, non-lethal weapons, devices, and munitions require timely and effective training. The **Inter-service Non-lethal Individual Weapons Instructor Course**, a “train-the-trainer” course, provides training and instruction on U.S. military non-lethal weapons and equipment fielded in the Non-Lethal Capability Sets or Escalation-of-Force Mission Modules, as well as on non-lethal tactics, techniques, and procedures.

Course graduates serve as subject matter experts and advisors on non-lethal weapons. All four Services have instructors in the course. In addition, each U.S. Service and the U.S. Coast Guard also conduct independent, non-lethal weapons training on mission-specific, non-lethal escalation-of-force options, some of which are described below:

## U.S. Army

The U.S. Army Non-lethal Scalable Effects Center’s non-lethal weapons presentations and hands-on demonstrations are part of the curriculum of the Basic Officer Leadership Course, Captains Career Course, Senior Warrior Leader Course, and Pre-Command Course.

As part of the fielding of the Non-Lethal Capability Sets to military police brigades, brigade combat teams, and maneuver enhancement brigades, Soldiers train as train-the-trainers on the use, care, and capabilities of the equipment included in the Non-Lethal Capability Sets. Completion of the training includes certification on the non-lethal munitions and the X26 TASER®.

## U.S. Marine Corps

Expeditionary Force’s Special Operations Training Groups provide the Escalation-of-Force Non-Lethal Weapons Course, which instructs Marines on a variety of Escalation-of-Force Mission Modules capabilities, as well as on non-lethal techniques.

Topics covered include how to spot and counter aggressive behavior; self-defense techniques; how to conduct vehicle and personnel searches; the use of roadblocks; and the employment of pepper spray and non-lethal impact munitions.

## U.S. Navy

Laser operators receive ongoing Administrative Laser Safety Officer training to ensure they have the appropriate knowledge to safely operate LA-9/P™ optical distracters. In addition, the Navy conducts escalation-of-force training with acoustic hailing devices, non-lethal warning munitions, and LA-9/Ps™.

## U.S. Air Force

The Headquarters Air Force Security Forces Center provides non-lethal weapons training during 15 Combat Arms Supervisors Courses, three security forces commander’s seminars, and seven information operations fundamentals application courses. The Security Forces Apprentice Course also introduces non-lethal weapons. Established requirements are taught during 12 Active Shooter Training courses, including the proper use of TASERS® and batons. In addition, Air Force regional training centers conduct non-lethal training for security forces deploying to their area of responsibility.

## U.S. Coast Guard

Ongoing Coast Guard training supports the operational test and evaluation of the LA51 Less Lethal Warning Munitions and Maritime Force Protection Units in anticipation of fleet-wide deployment of LA51 in 2012. Additionally, the Coast Guard conducts unit training in support of its pepper ball operational test and evaluation.

Year-round, mission-focused, escalation-of-force training is conducted at the Maritime Law Enforcement Academy and at the Special Mission Training Center. Graduates from these institutions are equipped with the knowledge and capability to conduct unit level non-lethal weapons training, helping to ensure appropriate employment of non-lethal weapons across a spectrum of missions.

*U.S. Soldiers fire a non-lethal M1029 40mm crowd-dispersal round from M320 grenade launchers.*





**Ongoing science and technology, and research and development efforts by the DoD Non-Lethal Weapons Program and other U.S. government agencies have crossover and dual-use value.**

# OTHER GOVERNMENT AGENCIES

The National Institute of Justice, the research, development, and evaluation agency of the **U.S. Department of Justice** shares a cooperative relationship with the U.S. Department of Defense Non-Lethal Weapons Program.

Like the DoD Non-Lethal Weapons Program, the National Institute of Justice determines technology requirements and researches solutions to address identified needs in law enforcement and corrections. Both agencies require non-lethal capabilities, also known as less-lethal technologies by law enforcement, for crowd dispersion secure areas, to subdue or disorient individuals, and to stop vehicles.

Since these agencies' requirements are similar, they benefit from sharing information and participating in each other's endeavors. By doing so, they minimize a duplication of efforts. Sharing information throughout the year enables the agencies to leverage each other's data as it applies to their specialized research.

Directed energy devices are an example of how the National Institute of Justice is leveraging the DoD Non-Lethal Weapons Program's research and development. The DoD researched and developed the Active Denial System, a vehicle-mounted, counter-personnel, non-lethal, directed-energy weapon. The National Institute of Justice is adapting the technology to develop a man-portable, lower-power system with a smaller focused beam using solid-state technology. The project is focused on cost, as well as size reduction. Both organizations can then benefit from advances in the development of the technology.

The reciprocal exchange of research information and data by the DoD Non-Lethal Weapons Program and the National Institute of Justice helps to explore technological solutions aimed at protecting warfighters and law enforcement officers, as well as minimizing unintended or permanent injuries, which are shared goals of the DoD and the Department of Justice.

The DoD Non-Lethal Weapons Program is interested in enhancing inter-agency communication and



*The above Department of Justice conceptual illustration depicts the Directed Energy Portable Radio Frequency Less-Lethal Device.*

coordination with other government agencies. With this goal in mind, the Joint Non-Lethal Weapons Directorate hosted two information exchange events, one with the **U.S. Department State** and another with the **U.S. Department of Energy**. The intent of the meetings was to foster greater coordination, communication, and technology transfer between the Department of Defense and the agencies.

*"For more than 10 years, the National Institute of Justice has had a long history of sharing research and expertise in developing and evaluating new less-lethal technology with the DoD. This has helped us both to expend limited funding on promising concepts. ..."*

*— Joe Cecconi  
Senior Scientist, Directed Energy Research Programs,  
National Institute of Justice, Department of Justice*





*“Scalable-effects technologies can provide a key range of capabilities to help achieve mission success while minimizing the risk of civilian casualties and property destruction. ...*

*The challenges and contingencies that U.S. forces are likely to face in the future present unique opportunities for scalable-effects weaponry to contribute to mission success, from counterinsurgency to stabilization operations to peacekeeping and more, not to mention the spectrum of law-enforcement operations that these technologies can support.”*

— Michael D. Lumpkin  
U.S. Principal Deputy Assistant Secretary of Defense  
for Special Operations/Low-Intensity Conflict

OTTAWA CONVENTION CENTRE  CENTRE DES CONGRÈS D'OTTAWA



*Conference participants (below) visit static displays to learn more about current non-lethal capabilities on the final day of the North American Technology Demonstration.*

*Connaught Range in Ottawa, Canada, was the site of non-lethal capability demonstrations during the North American Technology Demonstration. (below)  
The Active Denial System was showcased during vignettes at the North American Technology Demonstration. (right)*







# NORTH AMERICAN TECHNOLOGY DEMONSTRATION



## NATO's Largest Non-Lethal Capabilities International Trade Show & Conference

The U.S. Department of Defense Non-Lethal Weapons Program/Joint Non-Lethal Weapons Directorate and the Department of National Defence Canada co-hosted the NATO-sponsored, 2011 **North American Technology Demonstration (NATD) Non-Lethal Capabilities International Trade Show & Conference** Oct. 25–27 in Ottawa, Canada.

Approximately 1,000 attendees from 100 international industries and 30 nations registered for the event. Showcased non-lethal weapons included: vehicle/vessel stopping and arresting systems; directed energy systems; blunt force weapons; multi-sensory grenades; human electromuscular incapacitation devices; acoustic hailers; bright lights; dazzling lasers; voice translation devices; personnel restraining systems; point or area marking munitions; combination platforms and control systems.

The 2011 NATD was held in support of a NATO request to confirm and demonstrate existing, or ready-to-be-fielded, non-lethal technologies to facilitate the rapid fielding of non-lethal capabilities for NATO's mission in Afghanistan (International Security Assistance Force) and counter-terrorism operations. In October 2007, Canada accepted the chairmanship of the NATO Defense Against Terrorism Programme of Work 11th Initiative (DAT 11) on non-lethal capabilities. The Programme of Work 11 mandates conducting the NATD.

Keynote speakers included Dan Ross, Assistant Deputy Minister (Materiel), Canadian Department of National Defence; Lieutenant General Richard Tryon, U.S. Marine Corps, Deputy Commandant for Plans, Policies, and Operations; and Ambassador Gábor Iklódy, NATO Assistant Secretary General for Emerging Security Challenges. Other notable participants included Michael D. Lumpkin, U.S. Acting Assistant Secretary of Defense for Special Operations/Low-Intensity Conflict and Lieutenant General Emil Bedard (Retired), U.S. Marine Corps, former Deputy Commandant for Plans, Policies, and Operations, Jose Gonzalez, Director, Land Warfare and Munitions, within the U.S. Office of the Under Secretary of Defense for Acquisition, Technology and Logistics and Brigadier General Giovanni Fungo, Assistant Chief of Staff, Capability Engineering, Allied Command Transformation.

The NATD was composed of three main activities, including NATO working group meetings (Oct. 25), static displays and conferences (Oct. 26), and dynamic demonstrations and static displays (Oct. 27).

The NATD offered NATO operational and armaments communities, as well as other allies and law enforcement communities, the opportunity to learn about the very latest non-lethal capabilities. Conference activities provided participants a variety of opportunities to learn that non-lethal weapons provide escalation-of-force options that minimize civilian casualties and infrastructure damage, as well as offer a safer means of determining intent of potentially hostile individuals and the ability to operate among civilian populations. Attendees also learned that units trained and equipped with lethal and non-lethal weapons are better prepared to progress through the escalation-of-force in a variety of scenarios.





# EXPANDING OUTREACH



Outreach efforts are ongoing, including this display of the Escalation-of-Force Mission Modules at the North American Technology Demonstration Non-Lethal Capabilities International Trade Show and Conference in Ottawa, Canada.



Conference attendees learn about the benefits of non-lethal capabilities at the 6th European Symposium on Non-Lethal Weapons. (Fraunhofer ICT Photo)

The Department of Defense Non-Lethal Weapons Program routinely engages with a variety of groups to inform others about non-lethal weapons, devices, and munitions, and the potential capability they provide our military forces. These engagements also ensure accurate information is provided, and that the DoD Non-Lethal Weapons Program is kept abreast of currently available and emerging technologies. Highlights include:

The **Force Protection Equipment Demonstration VIII**, held May 17-19 in Stafford, Va., showcased approximately 3,000 commercial off-the-shelf products to nearly 22,500 attendees. Personnel from the Joint Non-Lethal Weapons Directorate staffed one of more than 575 exhibits during this three-day event.

The objective of the **6th European Symposium on Non-Lethal Weapons**, held in Ettlingen, Germany in May 2011, was to identify current developments in the field of non-lethal weapons, as well as the benefits and potential outcomes of their use in both military and law enforcement situations. The conference provided participants an opportunity to attend dozens of non-lethal weapon-related presentations. Topics included non-lethal requirements; operational and

tactical employment of non-lethal capabilities; current and advanced technologies; effects on targets, evaluation of effects; related legal information; and public acceptance. The U.S. European Combatant Command Liaison Officer and a senior international defense analyst represented the DoD Non-Lethal Weapons Program and were among the approximate 130 attendees who participated in the three-day event.

The Joint Non Lethal Weapons Directorate provided a brief to the Joint Service Small Arms Synchronization Team during the **International Infantry & Joint Services Small Arms Symposium**, held in Indianapolis in May 2011. The team, which consists of the government's small arms combat and materiel developers, was advised of the status of non-lethal munitions development efforts, and recommended future development and collaboration efforts between the group and the DoD Non-Lethal Weapons Program. An additional brief was presented to approximately 500 industry representatives about the Joint Non-Lethal Weapons Program, future business opportunities with the Program, and how industry could support the development and advancement of non-lethal munitions.



**“...non-lethal weapons can prevent civilian casualties and give Marines and Soldiers the ability to better confront situations in which it isn’t clear whether lethal force is necessary.”**

Through its **Strategic Communication** efforts, the Department of Defense Non-Lethal Weapons Program seeks to increase the knowledge and awareness of the DoD’s non-lethal weapons initiatives across a broad audience base. Program efforts focus on providing accurate and timely information on fielded and developing capabilities, as well as the research and development of emerging technologies.

The Joint Non-Lethal Weapons Directorate routinely receives media inquiries, and its work is featured in numerous military, scientific, political and general news outlets. Some of the media outlets that recently covered the DoD Non-Lethal Weapons Program are listed below. Additional non-lethal weapon-related news, media releases, newsletters, annual reports, frequently asked questions and media query submission instructions are available on the Program’s website at: <http://jnlwp.defense.gov/>

### Recent news outlets featuring the DoD Non-Lethal Weapons Program:

- ABC News Online
- Bloomberg News
- CQ Roll Call (*See right*)
- Dayton Daily News
- Defense IQ
- Marine Corps Times
- NATOchannel.tv
- New Scientist
- Pentagon Channel
- Pentagram
- Quantico Sentry
- Scientific American
- Special Operations Technology
- The Daily
- The Economist
- The Globe (Camp Lejeune)
- The New York Times

— Lieutenant General Richard P. Mills, U.S. Marine Corps Commanding General, Marine Corps Combat Development Command Former Commander, Regional Command Southwest International Security Assistance Force Joint Command U.S. Forces Afghanistan



(Photo/Wanda J. Napier)

Note. Reprinted with permission from Congressional Quarterly Roll Call



# HUMAN EFFECTS

Non-lethal human effects, or the physiological and behavioral responses resulting from non-lethal weapons employment, play an essential role in the research and development of non-lethal capabilities. Non-lethal human effects research identifies the risk of significant injury and characterizes a technology's non-lethal "operating envelope" to ensure the development and fielding of safe and effective capabilities.

Since 2006, the Department of Defense Non-Lethal Weapons Program has been developing a **Human Effect Modeling Analysis Program**, referred to as HE-MAP.

HE-MAP is a collection of detailed, validated and verified models that provide predictions for a range of human effects, as well as a standardized and centralized approach for non-lethal weapons human effects assessments. The HE-MAP 4.0 includes the capability to assess injury from blunt trauma, burns, blast, acoustics, and thermal and broadband hazards from optical effects. The HE-MAP is used to provide design guidance and to conduct risk assessments of non-lethal, counter-personnel programs, such as the Mission Payload Module-Non-Lethal Weapon System and the Improved Flash-Bang Grenade.

Other ongoing science and technology human effects efforts support development of emerging non-lethal directed-energy capabilities. Directed-energy

technologies, such as those that can be used for vehicle and vessel stopping, have the potential to provide the warfighter a greatly enhanced capability over existing non-lethal technologies. Associated human effects research, including modeling and simulation, field measurements, and laboratory studies, help assess potential risks of directed-energy exposure. Research results are used to characterize operational risks and to develop recommendations for reducing the risk of injury.

## How does it work?

Through experimentation, researchers generate data on the amount of non-lethal stimulus necessary to be effective yet minimize the risk of significant injury. This includes developing dose-response curves. Researchers then use this information to develop or refine non-lethal human effects models. Researchers validate and verify the Human Effects Modeling Analysis Program to ensure the components are generating accurate and consistent predictions.

## HE-MAP: A Suite of Computer Models

- INJURY 8.2 – Analyzes blast (lung injury)
- Auditory 3.0 – Analyzes acoustics (impulse sound)
- Optical Effects Analysis Tool Suite – Analyzes thermal and broadband hazards



Advanced Total Body Model – Analyzes blunt trauma





711th Human Performance Wing of the Air Force Research Laboratory scientists configure test equipment for a laser experiment. Results from this and similar research are essential for the development and fielding of non-lethal weapon capabilities.

Central to the DoD Non-Lethal Weapons Program human effects efforts is the **Human Effects Center of Excellence**, referred to as HECOE.

The HECOE serves as the one-stop shop for the characterization of non-lethal weapons human effects. This center, which was established in partnership with the Air Force Research Laboratory and the Joint Non-Lethal Weapons Program, is located at the DoD's Tri-Service Research Laboratory at Fort Sam Houston, Texas. It allows for the concentration of human effects resources into one location and provides programmatic and fiscal integration.

The center provides subject matter expertise pertaining to human effects throughout the acquisition process. Involvement in the requirements generation process ensures that human effects requirements are testable and can be verified. The HECOE also participates in Analysis of Alternatives helping programs prioritize potential technology candidates based upon human effects. For those candidates

chosen, HECOE identifies research roadmaps that will increase confidence in the validity of relevant human effects. Finally, HECOE assists the test and evaluation community as they verify human effects requirements have been met by conducting human effects characterizations, which predict operational outcomes pertaining to both risk and effectiveness.

To bolster their ability to support the entire acquisition process, HECOE provides strategic direction and oversight for human effects research and the development of computational models and methodologies to evaluate effectiveness and risk of various stimuli. These tools and the ever increasing understanding of human effects allows HECOE to not only retrospectively characterize existing stimuli for risk and effectiveness, but also to provide prospective design guidance enabling effects-based design that ultimately leads to safer and more effective technologies, as well as substantial costs and schedule savings.



# DEMONSTRATING CAPABILITIES

The Department of Defense Non-Lethal Weapons Program conducts demonstrations and assessments of various non-lethal weapons technologies to validate their ability to meet warfighter needs for a broad range of military operations.

This year, the DoD Non-Lethal Weapons Program's counter-personnel demonstrations featured a full-scale **Distributed Sound and Light Array** system, which uses a combination of sound and light to hail, warn and/or deter approaching vehicles, vessels, and individuals from military checkpoints and base perimeters. The Distributed Sound and Light Array was mounted to a tower to show how it can provide additional standoff protection in operations where there is widespread use of vehicle-borne improvised explosives.

Counter-materiel demonstrations and assessments included the **Pre-emplaced Electrical Vehicle Stopper**, which disrupts the electronic controls of a vehicle causing it to stop. The system is reusable for thousands of engagements, and provides remote targeting of vehicles at significant distances. It can be moved by two people and used to stop different size vehicles. Stopped vehicles can be immediately moved from traffic lanes, so that normal traffic patterns can quickly resume.

The DoD Non-Lethal Weapons Program demonstrated the Distributed Sound and Light Array and the Pre-emplaced Electrical Vehicle Stopper to representatives from the U.S. Central Command, other Department of Defense agencies, and the Department of Homeland Security, at Naval Surface Warfare Center, Dahlgren Division at Dahlgren, Va. Both technologies help address U.S. Central Command's mission-critical needs for integrated base defense, including addressing improvised explosive device threats and minimizing civilian casualties at forward operating base entry control points.

At the demonstration, the Pre-emplaced Electrical Vehicle Stopper, and the Distributed Sound and Light Array systems displayed an escalation-of-force capability to hail, warn, and stop approaching vehicles, including cooperative and uncooperative simulated targets, at distances up to several hundred yards.

Other emerging non-lethal weapon capabilities demonstrated this year include the 40mm Human Electro-Muscular Incapacitation projectile and radio frequency directed energy for vessel stopping.



*The Distributed Sound and Light Array provides a distinct visual warning, as seen at dusk during a DoD Non-Lethal Weapons Program demonstration.*





## DIRECTOR'S PERSPECTIVE

As the nature of warfare evolves and sometimes revisits itself, U.S. forces must adapt to complex military environments and demanding operational requirements. Among those requirements is the imperative to achieve mission success while minimizing civilian casualties and collateral damage. Non-lethal weapons can help achieve this objective.

In the 15 years since its establishment in 1996, the Department of Defense Non-Lethal Weapons Program has demonstrated the value and relevance of these technologies to our operational forces and the nation. The Program has developed and facilitated the fielding of new types of non-lethal capabilities that give more options to the warfighter across an expanding range of military operations. This Annual Report highlights existing non-lethal weapons, promising future technologies in development, and efforts underway to maximize these unique capabilities' potential.

U.S. forces are engaged in a broad range of military operations in support of national objectives. From anti-piracy to counterterrorism, from humanitarian assistance and disaster relief to stability and post-conflict reconstruction operations, our armed forces are operating in increasingly diverse and difficult environments. Consequently, our forces must be flexible and adapt to an array of force application scenarios, whether forward-deployed or in support of homeland defense requirements.

Non-lethal weapons help provide that additional flexibility and adaptability, and are a valuable adjunct to the use of lethal force. They provide a “de-escalation-of-force” option between shouting and shooting. They assist forces to determine intent of advancing personnel prior to employing lethal force, or to segregate, isolate, and then incapacitate combatants hiding among civilians. Fielded non-lethal weapons reduce damage to property, while future systems offer promising force application effects that minimize damage to critical infrastructure. In addition to reducing collateral



*Colonel Tracy J. Tafolla addresses the media at the North American Technology Demonstration Non-Lethal Capabilities International Trade Show & Conference.*

damage, such applications could potentially save tens of millions of dollars in U.S.-borne reconstruction costs.

Our investment in non-lethal technologies is modest, even in today's fiscal environment. But such investment carries high strategic payoffs. When fully integrated with Service doctrine, training, and exercises, non-lethal weapons will help close important capability gaps and offer U.S. forces scalable options for addressing critical national security missions.

Despite many significant accomplishments in non-lethal weapon development, fielding and integration, we must increase our efforts to support growing DoD demands for these versatile capabilities. We are looking forward to continued program successes in the coming year, and the establishment of non-lethal weapons as an ubiquitous combat enabler in the years ahead.

— Colonel Tracy J. Tafolla  
Director, Joint Non-Lethal Weapons Directorate

***“The [DoD Non-Lethal Weapons] Program has developed and facilitated the fielding of new types of non-lethal capabilities that give more options to the warfighter across an expanding range of military operations.”***





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## U.S. Army

757-501-5468  
DSN: 501-5468



## U.S. Marine Corps

703-432-8140  
DSN: 378-8140



## U.S. Navy

757-361-0200



## U.S. Air Force

210-925-7028  
DSN: 945-7028



## U.S. Coast Guard

202-372-1341



## U.S. Special Operations Command

813-826-6916  
DSN: 299-6916

# SOLICITATIONS

The Department of Defense Non-Lethal Weapons Program appreciates organizations that are interested in furthering the development of the next generation of non-lethal weapons. Visit <http://jnlwp.defense.gov/> to access U.S. government and military solicitations related to non-lethal weapons.



Industry representatives and military personnel discuss non-lethal capabilities at the Joint Integration Program demonstration.





# MARK YOUR CALENDAR

## U.S. DoD Non-Lethal Weapons Program 2012 <http://jnlwp.defense.gov>

### JANUARY 16 Martin Luther King, Jr. Day

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	<b>16</b>	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

### FEBRUARY 20 Presidents' Day

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19	<b>20</b>	21	22	23	24	25
26	27	28	29			

### MARCH 22 Commandant of the Marine Corps Established as DoD Non-Lethal Weapons Program Executive Agent (1996)

S	M	T	W	T	F	S
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25	26	27	28	29	30	31

### APRIL 9 U.S. Special Forces Birthday

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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

### MAY 19 Armed Forces Day 22 National Maritime Day 28 Memorial Day

S	M	T	W	T	F	S
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6	7	8	9	10	11	12
13	14	15	16	17	18	<b>19</b>
20	21	<b>22</b>	23	24	25	26
27	<b>28</b>	29	30	31		

### JUNE 6 Anniversary of D-Day 14 U.S. Army Birthday 14 Flag Day

S	M	T	W	T	F	S
					1	2
3	4	5	<b>6</b>	7	8	9
10	11	12	13	<b>14</b>	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

### JULY 1 JNLWD Opened Its Doors (1997) 4 Independence Day 9 DoD Non-Lethal Weapons Program Established (1996)

S	M	T	W	T	F	S
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8	<b>9</b>	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

### AUGUST 4 U.S. Coast Guard Birthday

S	M	T	W	T	F	S
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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	31		

### SEPTEMBER 11 Patriot Day 18 U.S. Air Force Birthday 21 National POW/MIA Recognition Day

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	<b>11</b>	12	13	14	15
16	17	<b>18</b>	19	20	<b>21</b>	22
23	24	25	26	27	28	29
30						

### OCTOBER 13 U.S. Navy Birthday

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	<b>13</b>
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

### NOVEMBER 10 U.S. Marine Corps Birthday 11 Veterans Day 12 Veterans Day Observed

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	<b>10</b>
<b>11</b>	<b>12</b>	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

### DECEMBER 7 Pearl Harbor Remembrance Day 13 U.S. National Guard Birthday

S	M	T	W	T	F	S
						1
2	3	4	5	6	<b>7</b>	8
9	10	11	12	<b>13</b>	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					



The U.S. Department of Defense Non-Lethal Weapons Program provides our operating forces escalation-of-force options, minimizing casualties and collateral damage.



# NON-LETHAL WEAPONS FOR COMPLEX ENVIRONMENTS

U.S. DoD NON-LETHAL WEAPONS PROGRAM



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Scan this QR code with your camera phone to go directly to <http://jnlwp.defense.gov>.

